

12-05-05

JAW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:)
David A. WILLIAMS, et al.)
Serial No. 10/705,561)
Filed: November 11, 2005)
METHODS FOR ENHANCED)
RETROVIRAL-MEDIATED GENE)
TRANSFER USING MOLECULES)
WITH VIRUS-AND CELL BINDING)

I hereby certify that this paper is being deposited with
the United States Postal Service "Express Mail Post
Office to Addressee" service under 37 CFR Section
1.10 on the date indicated and is addressed to the
Commissioner for Patents, PO Box 1450, Alexandria,
VA 22313-1450.

EV 721135651 US

Express Mail Label No.

Date of Deposit

John J. Emanuele

Name

Signature

December 2, 2005

Date of Signature

Group Art Unit 1633

INFORMATION DISCLOSURE STATEMENT

MAIL STOP AMENDMENT
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the provisions of 37 CFR 1.56, 1.97, and 1.98, Applicant requests
consideration of the references listed on the attached PTO/SB/08 forms and/or the additional
information identified below.

A legible copy of each foreign patent document and publication listed on the PTO/SB/08
form is enclosed.

For each non-English language reference listed on the attached SB/08 form, reference is
made to:

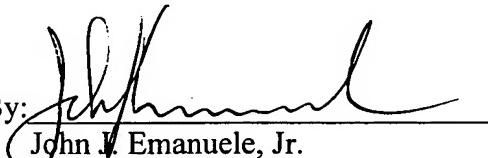
Japanese Patent No. 2-97397 corresponding to European Patent Application Publication No. 0 349 342 A2, a copy of which is also enclosed.

Japanese Publication No. 2-311498 corresponding to Kimizuka et al. U.S. Patent No. 5,102,988, and European Patent Application Publication No. 0 399, 806 A2. A copy of the European publication is enclosed.

This Information Disclosure Statement is submitted before the first Office Action on the merits, and thus no certification and/or fee is required. Should any other fee be required, however, please charge such fee to Deposit Account No. 23-3030, but not to include any payment of issue fees.

The filing of this Information Disclosure Statement shall not be construed as an admission that the information cited is, or is considered to be, material to patentability as defined in §1.56(b).

Respectfully Submitted,

By: 
John J. Emanuele, Jr.
Registration No. 51,653
Woodard, Emhardt, Moriarty,
McNett & Henry LLC
Bank One Center/Tower
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456



WEMMH/SB/08A (4/03)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 10

Complete if Known

Application Number	10/705,561
Filing Date	11/11/2003
First Named Inventor	David A. WILLIAMS
Group Art Unit	1633
Examiner Name	

Attorney Docket Number 7037-485

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date	Name of Patentee or Application of Cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)	MM-DD-YYYY		
		4,727,059	02-01-1988	Binder	
		4,839,464	06-01-1989	McCarthy	
		4,980,279	12-01-1990	Peters	
		5,004,681	04-02-1991	Boyse	
		5,019,646	05-28-1991	Furcht	
		5,102,988	04-07-1992	Kimizuka	
		5,116,368	05-26-1992	McCarthy	
		5,124,155	06-23-1992	Reich	
		5,175,096	12-29-1992	Hook	
		5,188,959	02-23-1993	Haberman	
		5,198,423	03-30-1993	Taguchi	
		5,229,172 A1	07-20-1993	Cahalan et al	
		5,299,172	03-29-1994	Badger	
		5,354,686	10-11-1994	Haberman	
		5,405,772	04-11-1995	Ponting	
		5,409,825	04-25-1995	Hoffman	

Examiner Signature	Date Considered
--------------------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 801.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO				Complete if Known	
				Application Number	10/705,561
				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	2	of	10.	Attorney Docket Number	7037-485

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite 1 No.	Foreign Patent Document Country Code ² - Number ³ -Kind Code ⁴ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Application of Cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁶
		EP 0 349 342 A2	01-03-1990	Takara Shuzo Co. Lt		<input type="checkbox"/>
		EP 0 399 806 A1	11-28-1990	Taguchi		<input type="checkbox"/>
		JP 2 311498	12-01-1989	Takara Shuzo Co. Lt		<input type="checkbox"/>
		JP 2 97397	09-04-1990	Takara Shuzo Co. Lt		<input type="checkbox"/>
		WO 90/13641	11-15-1990	Sloan-Kettering		<input type="checkbox"/>
		WO 93/18137 A1	09-16-1993	Systemix Inc.		<input type="checkbox"/>
		WO 94/02610	02-03-1994	Dana-Farber Cancer		<input type="checkbox"/>
		WO 95/26200	10-05-1995	Indiana University F		<input type="checkbox"/>

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.87 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Substitute for form 1449A/PTO				Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/705,561
(use as many sheets as necessary)				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	3	of	10	Attorney Docket Number	7037-485
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			
		"Cell-Cell Adhesion and the Extracellular Matrix", Molecular Biology of the Cell, 1983, pp. 673-713, Garland Publishing Co., New York <input type="checkbox"/>			
		"Bubble Boy saved by gene therapy", BBC News, April 3, 2000 <input type="checkbox"/>			
		ANDERSON, F., "Human Gene Therapy", Nature, Apr. 30, 1998, Vol./Issue No. 392 Supp., pp. 25-30 <input type="checkbox"/>			
		ANDERSON, W. FRENCH, "Human Gene Therapy - SCIENCE", SCIENCE, May 8, 1992, Vol./Issue No. 256, pp. 808-813 <input type="checkbox"/>			
		ANDERSON, W. FRENCH, "Prospects for Human Gene Therapy", <input type="checkbox"/>			
		APPERLEY, J.F., ET AL., "Retroviral Gene Transfer of Human Adenosine Deaminase in Murine Hematopoietic Cells: Effect of Selectable Marker Sequences on Long-Term Expression", Amer. Soc. Hematology, 1991, pp. 310-317 <input type="checkbox"/>			
		ASHWELL, G. ET AL., "Carbohydrate-Specific Receptors of the Liver", Ann. Rev. Biochem, 1982, Vol./Issue No. 51, pp. 531-554 <input type="checkbox"/>			
		BERNARDI ET AL., "Lymphoid Precursor Cells Adhere to Two Different Sites on Fibronectin", J. Cell Biol., 1987, Vol./Issue No. 105, pp. 489-498 <input type="checkbox"/>			
		BIENZLE, DOROTHEE ET AL., "Gene transfer into hematopoietic stem cells: Long-term maintenance of in vitro activated progenitors without marrow ablation", Proc. Natl. Acad. Sci. USA, 1994, Vol./Issue No. 91, pp. 350-354 <input type="checkbox"/>			
		BODINE, D.M. ET AL., "Long-term in vivo expression of a Murine Adenosine Deaminase Gene in Rhesus Monkey Hematopoietic Cells of Multiple Lineages After Retroviral-mediated Gene Transfer into CD34+ Bone Marrow Cells", Blood, 1993, Vol./Issue No. 82, pp. 1975-1980 <input type="checkbox"/>			
		BODINE, DAVID M., ET AL., "Development of a High-Titer Retrovirus Producer Cell Line Capable of Gene Transfer into Rhesus Monkey Hematopoietic Stem Cells", Proc. Natl. Acad. Sci. USA, 1990, Vol./Issue No. 87, pp. 3738-3742 <input type="checkbox"/>			
		BRADLEY, T.R. ET AL., "The Growth of Mouse Bone Marrow Cells in Vitro", Aust. J. Exp. Biol. Med. Sci., 1966, Vol./Issue No. 44, pp. 287-300 <input type="checkbox"/>			
		BROXMEYER, H.E. ET AL., "Umbilical Cord Blood Hematopoietic Stem and Repopulating Cells in Human Clinical Transplantation", Blood Cells, 1991, Vol./Issue No. 17, pp. 313-329 <input type="checkbox"/>			
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.88. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-788-9199) and select option 2.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/705,561
(use as many sheets as necessary)				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	4	of	10	Attorney Docket Number	7037-485
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			T ²
		BROXMEYER, H.E. ET AL., "The future of Umbilical Cord Transportation", Umbilical Cord Blood Transportation, , pp. 321-329			<input type="checkbox"/>
		CARTER, ET AL., "Autologous Transplantation of Canine Long-Term Marrow Culture Cells Genetically Marked by Retroviral Vectors", Blood, 1992, Vol./Issue No. 79:2, pp. 356-364			<input type="checkbox"/>
		CORNELLA, ET AL., "Protamine sulfate as an effective alternative to polybrene in retroviral-mediated gene-transfer: implications for human gene therapy", Journal of Virological Methods, 1989, Vol./Issue No. 23, pp. 187-194			<input type="checkbox"/>
		CRISTIANO, R.J., ET AL., "Hepatic Gene Therapy: Adenovirus Enhancement of Receptor-Mediated Gene Delivery and Expression in Primary Hepatocytes", Proc. Natl. Acad. Sci. USA, 1993, Vol./Issue No. 90, pp. 2122-2126			<input type="checkbox"/>
		DILBER, MS. ET AL., "Basic fibroblast growth factor increases retroviral-mediated gene transfer into human hematopoietic peripheral blood progenitor cells", Exp. Hematol, 1994, Vol./Issue No. 22:12, pp. 1129-1133			<input type="checkbox"/>
		EMONS, G. ET AL., "The Use of Luteinizing Hormone Releasing Hormone Agonists and Antagonists in Gynecological Cancers", Hum. Reprod., 1994, Vol./Issue No. 9:7, pp. 1364-1379			<input type="checkbox"/>
		FICHARD ET AL., "Another Look at Collagen V and XI Molecules", Matrix Biology, 1994, Vol./Issue No. 14, pp. 515-531			<input type="checkbox"/>
		FLASSHOVE, M. ET AL., "Increased resistance to taxol for peripheral blood progenitor cells following transduction with an MDR1-encoding retroviral vector", Exp. Hematol., 1995, Vol./Issue No. Abstract 23/8, pp. 934			<input type="checkbox"/>
		FLASSHOVE, MICHALE, ET AL., "Ex Vivo Expansion and Selection of Human CD34+ Peripheral Blood Progenitor Cells After Introduction of a Mutated Dihydrofolate Reductase cDNA via Retroviral Gene Transfer", Blood, January 2, 1995, Vol./Issue No. 85:2, pp. 566-574			<input type="checkbox"/>
		FRIEDMANN, THEODORE, "Progress Toward Human Gene Therapy", SCIENCE, June 1989, pp. 1276-1281			<input type="checkbox"/>
		GARDNER, ELTON JOHN ET AL., "Somatic-Cell Tene Therapy Treatment of Human Diseases", Principles of Genetics, , Vol./Issue No. Chapter 24 Genetic Engineering and the Future, pp. 645-648, John Wiley & Sons, New York			<input type="checkbox"/>
		GLUCKMAN, E. ET AL., "Bone Marrow Transplantation in Fanconi Anaemia", British J. of Haem., 1980, Vol./Issue No. 45, pp. 557-564			<input type="checkbox"/>
		HANENBERG, A. ET AL., "Rapid and efficient transduction of primitive hematopoietic cells; role of retrovirus adhesion in fibronectin assisted gene transfer", Blood, 1995, Vol./Issue No. 86:10, pp. 465a, Abstract JP 002076947			<input type="checkbox"/>
Examiner Signature					Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
Sheet		5	of	10	Application Number
					10/705,561
					Filing Date
					11/11/2003
					First Named Inventor
					David A. WILLIAMS
					Group Art Unit
					1633
					Examiner Name
					Attorney Docket Number
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			
		HARAGUCHI ET AL., "Effects of Polycations on Infection with Human Retroviruses", Int. Conf. AIDS, 1994, Vol./Issue No. 10:2, pp. 114, Abstract PA0337			
		HODGSON, CLAGUE P. ET AL., "Virosomes: Cationic Liposomes Enhance Retroviral Transduction", Nature Biotechnology, 1996, Vol./Issue No. 14, pp. 339-342			
		HOGGE, DONNA E. ET AL., "The Elusive Peripheral Blood Hematopoietic Stem Cell", Seminars in Hematology, 1993, Vol./Issue No. 30:4 Supp. 4, pp. 82-89			
		HOogerbrugge, P.M. ET AL., "Bone marrow gene transfer in three patients with adenosine deaminase deficiency", Gene Therapy, 1996, Vol./Issue No. 3, pp. 179-183			
		HOWELL, A. ET AL., "Response to a Specific Antiestrogen (ICI 182780) in Tamoxifen-Resistant Breast Cancer", The Lancet, 1995, Vol./Issue No. 345, pp. 29-30			
		HOWS, J.M. ET AL., "Growth of human umbilical cord blood in longterm haemopoietic cultures", Lancet, July 11, 1992, Vol./Issue No. 340, pp. 73-76			
		KARLSSON, STEFAN, "Treatment of Genetic Defects in Hematopoietic Cell Function by Gene Transfer", Blood, 1991, Vol./Issue No. 78:10, pp. 2481-2492			
		KASAHARA, N. ET AL., "Tissue-Specific Targeting of Retroviral Vectors Through Ligand-Receptor Interactions", Science, 1994, Vol./Issue No. 266, pp. 1373-1376			
		KIMIZUKA ET AL., "Production and Characterization of Functional Domains of Human Fibronectin Expressed in Escherichia coli", J. Biochem., 1991, Vol./Issue No. 110:2, pp. 284-291			
		KLIJN, J.G.M. ET AL., "Pre-Clinical and Clinical Treatment of Breast Cancer With Antiprogestins", Hum. Reprod., 1994, Vol./Issue No. 9 Supp. 1, pp. 181-189			
		KOHLI-KUMAR, M. ET AL., "Haematopoietic Stem/Progenitor Cell Transplant in Fanconi Anaemia Using HLA-Matched Sibling Umbilical Cord Blood Cells", British J. Haem., 1993, Vol./Issue No. 85, pp. 419-422			
		KOHN, DONALD B., "The Current Status of Gene Therapy Using Hematopoietic Stem Cells", Current Opinion in Pediatrics, 1995, Vol./Issue No. 7, pp. 56-63			
		KORNBLIHT, A.R., ET AL, "Primary structure of human fibronectin: differential splicing may generate at least 10 polypeptides from a single gene", EMBO J., 1985, Vol./Issue No. 4:7, pp. 1755-1759			
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.88. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO				Complete if Known	
				Application Number	10/705,561
				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	6	of	10	Attorney Docket Number	7037-485
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. 1	Include name of the author (In CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			
		KORNBLIHTT, A.R., ET AL, "Isolation and characterization of cDNA clones for humans and bovine fibronectin", Proc. Natl. Acad. Sci. USA, 1983, Vol./Issue No. 80:11, pp. 3218-3222 <input type="checkbox"/>			
		KORNBLIHTT, A.R., ET AL, "Human fibronectin: molecular cloning evidence for two mRNA species differing by an internal segment coding for a structural domain", EMBO J., 1984, Vol./Issue No. Abstract 3/1 pp. 221-226 <input type="checkbox"/>			
		KORNBLIHTT, A.R., ET AL, "Human fibronectin: cell specific alternative mRNA splicing generates polypeptide chains differing in the number of internal repeats", Nucleic Acids Res., 1984, Vol./Issue No. Abstract 12/14 pp. 5853-5868 <input type="checkbox"/>			
		LIM, B., ET AL., "Retrovirus-Mediated Gene Transfer of Human Adenosine Deaminase: Expression of Functional Enzyme in Murine Hematopoietic Stem Cells in Vivo", Mol. Cell. Biol., 1987, Vol./Issue No. 7:10 pp. 3459-3465 <input type="checkbox"/>			
		LIM, ET AL., "Long-Term Expression Of Human Adenosine Deaminase In Mice Transplanted With Retrovirus-Infected Hematopoietic Stem Cells", Proc. Natl. Acad. Sci. U.S.A., 1989, Vol./Issue No. 86, pp. 8892-8896 <input type="checkbox"/>			
		LONG, MICHAEL W., "Blood Cell Cytoadhesion Molecules", Exp. Hematol, 1992, Vol./Issue No. 20, pp. 288-301 <input type="checkbox"/>			
		LU, L. ET AL., "CD34 stem/progenitor cells purified from cryopreserved cord blood can be transduced with high efficiency by a retroviral vector and expanded ex vivo with stable integration and expression of fanoconi anemia complement c gene", Blood, 1994, Vol./Issue No. Abstract 84/10 Supp. 1 pp. 355a <input type="checkbox"/>			
		LUSKEY, B.D., ET AL., "Stem Cell Factor, Interleukin-3, and Interleukin-6 Promote Retroviral-Mediated Gene Transfer Into Murine Hematopoietic Stem Cells", Blood, 1992, Vol./Issue No. 80:2, pp. 396-402 <input type="checkbox"/>			
		MARKOWITZ, D. ET AL., "Construction and Use of a Safe and Efficient Amphotropic Packaging Cell Line", Virology, 1988, Vol./Issue No. 167, pp. 400-406 <input type="checkbox"/>			
		MARKOWITZ, D. ET AL., "A Safe Packaging Line for Gene Transfer: Separating Viral Genes on Two Different Plasmids", J. Virol., 1988, Vol./Issue No. 62:4, pp. 1120-1124 <input type="checkbox"/>			
		MCGLAVE P. ET AL., "Interaction of primitive human myeloid and lymphoid progenitors with the marrow microenvironment", Blood Cells, 1994, Vol./Issue No. 20:1, pp. 121-128 <input type="checkbox"/>			
		MERWIN, JUNE R. ET AL., "Targeted Delivery of DNA Using YEE(GalNAcAH)3, a Synthetic Glycopeptide Ligand for the Asialoglycoprotein Receptor", Bioconjugate Chem., 1994, Vol./Issue No. 5:6 pp. 612-620 <input type="checkbox"/>			
		MILLER, A. DUSTY, "Human Gene Therapy Comes of Age", Nature, June 11, 1992, Vol./Issue No. 357, pp. 455-460 <input type="checkbox"/>			
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO				Complete if Known	
				Application Number	10/705,561
				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	7	of	10	Attorney Docket Number	7037-485
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			T ²
		MOORE, KATERI A. ET AL., "Stromal Support Enhances Cell-Free Retroviral Vector Transduction of Human Bone Marrow Long-Term Culture-Initiating Cells", Blood, 1992, Vol./Issue No. 79:6, pp. 1393-1399			<input type="checkbox"/>
		MOORE, M.A., ET AL., "Gene Therapy: New Frontiers, an International Symposium", Meeting Abstract: Dublin, Ireland, Sept. 18-21, 1994, pp. 1-2			<input type="checkbox"/>
		MOORE, MALCOLM A.S., "Ex vivo expansion of cord blood-derived stem cells and progenitors", Blood Cells, 1994, Vol./Issue No. 20, pp. 468-481, Meeting Abstract			<input type="checkbox"/>
		MORITZ, T. ET AL., "Bone Marrow Extracellular Matrix Molecules Improve Gene Transfer into Human Hematopoietic Cells via Retroviral Vectors", J. Clin. Invest., 1994, Vol./Issue No. 93, pp. 1451-1457			<input type="checkbox"/>
		MORITZ, T. ET AL., "Human Cord Blood Cells as Targets For Gene Transfer: Potential Use In Genetic Therapies Of Severe Combined Immunodeficiency Disease", J. Exp. Med., 1993, Vol./Issue No. 178, pp. 529-536			<input type="checkbox"/>
		NGO, J. THOMAS ET AL., "Computational Complexity, Protein Structure Prediction, and the Levinthal Paradox", The Protein Folding Problem and Tertiary Structure Prediction, 1994, pp. 491-495			<input type="checkbox"/>
		NOJIMA, YOSHIHISA ET AL., "Ligation of VLA-4 on T Cells Stimulates Tyrosine Phosphorylation of a 105-kD Protein", J. Exp. Med., 1992, Vol./Issue No. 175, pp. 1045-1053			<input type="checkbox"/>
		OHASHI, T., ET AL., "Efficient Transfer and Sustained High Expression of the Human Glucocerebrosidase Gene in Mice and Their Functional Macrophages Following Transplantation of Bone Marrow Transduced by a Retroviral Vector", Proc. Natl. Acad. Sci. USA, 1992, Vol./Issue No. 89			<input type="checkbox"/>
		PATEL ET AL., "Generation of interleukin-2 Secreting melanoma Cell Populations from Resected Metastatic Tumor", Human Gene Therapy, 1994, Vol./Issue No. 5, pp. 577-584			<input type="checkbox"/>
		PATEL, ET AL., "Loss of Adhesion of Murine Erythroleukemia Cells to Fibronectin During Erythroid Differentiation", Science, 1984, Vol./Issue No. 224, pp. 996-998			<input type="checkbox"/>
		PATEL, V.P. ET AL., "The Fibronectin Receptor on Mammalian Erythroid Precursor Cells: Characterization and Developmental Regulation", J. Cell Biol., 1986, Vol./Issue No. 102, pp. 449-456			<input type="checkbox"/>
		REISBACH, G. ET AL., "Characterization of hemopoietic cell populations from human cord blood expressing c-kit", Exp. Hematol., 1993, Vol./Issue No. 21, pp. 74-79			<input type="checkbox"/>
		RIDDELL, STANLEY ET AL., "T-cell mediated rejection of gene-modified HIV-specific cytotoxic T lymphocytes in HIV-infected patients", Nature Medicine, 1996, Vol./Issue No. 2:2, pp. 216-223			<input type="checkbox"/>
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
				Application Number	10/705,561
				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	8	of	10	Attorney Docket Number	7037-485

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Indicate name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published	T ²
		RUOSLAhti, E., "Fibronectin and Its Receptors", Ann. Rev. Biochem., 1988, Vol./Issue No. 57, pp. 375-413	<input type="checkbox"/>
		RUOSLAhti, E., "Fibro-nectin: Purification, Immunochemical Properties, and Biological Activities", Methods in Enzymology, 1982, Vol./Issue No. 82, pp. 803-831	<input type="checkbox"/>
		RUOSLAhti, E. ET AL., "Alignment Of Biologically Active Domains in The Fibronectin Molecule", J. Bio. Chem., 1981, Vol./Issue No. 256, pp. 7277-7281	<input type="checkbox"/>
		SAIKI, IKUO ET AL., "Inhibitory effect of fibronectin and its recombinant polypeptides on the adhesion of metastatic melanoma cells to Laminin", Jpn. J. Cancer Res., 1991, Vol./Issue No. 82, pp. 1112-1119	<input type="checkbox"/>
		SEKIGUCHI, K. ET AL., "Human Liver Fibronectin Complementary DNAs: Identification of Two Different Messenger RNAs Possibly Encoding the α and β Subunits of Plasma Fibronectin", Biochemistry, 1986, Vol./Issue No. 25, pp. 4936-4941	<input type="checkbox"/>
		SHIH, C-C., ET AL., "Highly Preferred Targets for Retrovirus Integration", Cell, 1988, Vol./Issue No. 53, pp. 531-537	<input type="checkbox"/>
		SINGH, VINOD ET AL., "Hormonotoxins: Preparation and Characterization of Ovine Luteinizing Hormone-Gelolin Conjugate", Journal of Biological Chemistry, 1989, Vol./Issue No. 264:6, pp. 3089-3095	<input type="checkbox"/>
		SORRENTINO, BRIAN P. ET AL., "Selection of Drug Resistant Bone Marrow Cells in Vivo After Retroviral Transfer of Human MDR1", SCIENCE, July 3, 1992, Vol./Issue No. 257, pp. 99-100	<input type="checkbox"/>
		SUTHERLAND ET AL., "Characterization and Partial Purification of Human Marrow Cells Capable of Initiating Long-Term Hematopoiesis In Vitro", Blood, 1989, Vol./Issue No. 74:5, pp. 1563-1570	<input type="checkbox"/>
		TOKSOZ ET AL., "Support of Human Hematopoiesis in Long-Term Bone Marrow Cultures by Muring Stromal Cells Selectively Expressing the Membrane-Bound and Secreted Forms of the Human Homolog of the Steel Gene Product Stem Cell Factor", Proc. Natl. Acad. Sci. USA, 1992, Vol./Issue	<input type="checkbox"/>
		TOLCHER, A.W., "Current Status of Post-chemotherapy Tamoxifen in Early Breast Cancer", Oncology, November 1994, Vol./Issue No. 8/11, pp. 39-43	<input type="checkbox"/>
		TORRE, D. ET AL., "Interaction of human plasma fibronectin with viral proteins of human immunodeficiency virus", Fems. Immunol. Med. Microbiol., 1994, Vol./Issue No. 8-2, pp. 127-131	<input type="checkbox"/>
		TSAI, SCHWICKWANN ET AL., "Differential binding of erythroid and myeloid progenitors to fibroblasts and fibronectin", Blood, 1987, Vol./Issue No. 69:6, pp. 1587-1594	<input type="checkbox"/>

Examiner Signature		Date Considered
--------------------	--	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/705,561
				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	9	of	10	Attorney Docket Number	7037-485
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			T ²
		VALSEZIA-WITTMANN, S. ET AL., "Modifications in the Binding Domain of Avian Retrovirus Envelope Protein to Redirect the Host Range of Retroviral Vectors", J. Virol., 1994, Vol./Issue No. 68:7 pp. 4609-4619			<input type="checkbox"/>
		VAN BEUSECHEM, V.W., ET AL., "Long-Term Expression of Human Adenosine Deaminase In Rhesus Monkeys Transplanted with Retrovirus-Infected Bone-Marrow Cells", Proc. Natl. Acad. Sci. USA, 1992, Vol./Issue No. 89, pp. 7640-7644			<input type="checkbox"/>
		VAN DER SLUIJS, "Differential Adherence of Murine Hematopoietic Stem Cell Subsets to Fibronectin", Experimental Hematology, 1994, Vol./Issue No. 22, pp. 1236-1243			<input type="checkbox"/>
		VARMUS, HAROLD, "Retroviruses", SCIENCE, June 10, 1988, pp. 1427-1434			<input type="checkbox"/>
		VERFAILLIE, C.M., ET AL., "Differentiation of Primitive Human Multipotent Hematopoietic Progenitors Into Single Lineage Clonogenic Progenitors is Accompanied by Alterations in Their Interaction with Fibronectin", J. Exp. Med., 1991, Vol./Issue No. 174, pp. 693-703			<input type="checkbox"/>
		VERMA, IM ET AL., "Gene therapy-promises, problems, and prospects", Nature, 1997, Vol./Issue No. 389, pp. 239-242			<input type="checkbox"/>
		WAGNER, J.E. ET AL., "Transplantation of Umbilical Cord Blood After Myeloblastic Therapy: Analysis of Engraftment", Blood, 1992, Vol./Issue No. 79:7, pp. 1874-1882			<input type="checkbox"/>
		WAGNER, J.E. ET AL., "Allogenic umbilical cord blood transplantation: Report of results in 26 patients", Blood, 1993, Vol./Issue No. Abstract, pp. 82-86a			<input type="checkbox"/>
		WATT ET AL., "Adhesion Receptors are differentially expressed on Developing Thymocytes and Epithelium In Human Thymus", Experimental Hematology, 1992, Vol./Issue No. 20, pp. 1101-1111			<input type="checkbox"/>
		WIGINTON, DAN A. ET AL., "Complete Sequence and Structure of the Gene for Human Adenosine Deaminase", Biochemistry, 1986, Vol./Issue No. 25, pp. 8234-8244			<input type="checkbox"/>
		WILLIAMS, DAVID A. ET AL., "Fibronectin and VLA-4 in Haematopoietic Stem Cell-Microenvironment Interactions", Nature, 1991, Vol./Issue No. 352, pp. 438-441			<input type="checkbox"/>
		WILLIAMS, DAVID A. ET AL., "Umbilical Cord Blood Stem Cells as Targets for Genetic Modification: New Therapeutic Approaches to Somatic Gene Therapy", Blood Cells, 1994, Vol./Issue No. 20, pp. 504-516			<input type="checkbox"/>
		XIAO, M. ET AL., "Extensive proliferative capacity of single isolated CD34 human cord blood cells in suspension culture", Blood Cells, 1994, Vol./Issue No. 20, pp. 455-467			<input type="checkbox"/>
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
 1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Approved for use through 07/31/2008, OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/705,561
				Filing Date	11/11/2003
				First Named Inventor	David A. WILLIAMS
				Group Art Unit	1633
				Examiner Name	
Sheet	10	of	10	Attorney Docket Number	7037-485
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published			T ²
		XU, L.C., ET AL., "Long-term in vivo expression of the human glucocerebrosidase gene in nonhuman primates after CD34+ hematopoietic cell transduction with cell-free retroviral vector preparations", Proc. Natl. Acad. Sci. USA, 1995, Vol./Issue No. 92, pp. 4372-4376			<input type="checkbox"/>
		XU, LINCHENG, ET AL., "Correction of the enzyme deficiency in hematopoietic cells of Gaucher patients using a clinically acceptable retroviral supernatant transduction protocol", Experimental Hematology, 1994, Vol./Issue No. 22, pp. 223-230			<input type="checkbox"/>
		YAO ET AL., "Primary myoblast-mediated gene transfer: persistent expression of human factor IX in mice", Gene Therapy, 1994, Vol./Issue No. 1:2, pp. 99-107			<input type="checkbox"/>
		ZIEGLER, B.L. ET AL., "Phenotype analysis of umbilical cord (CB) blood CD34 cell subpopulations", Blood, 1992, Vol./Issue No. 80 Supp. 1, pp. 408A			<input type="checkbox"/>

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.